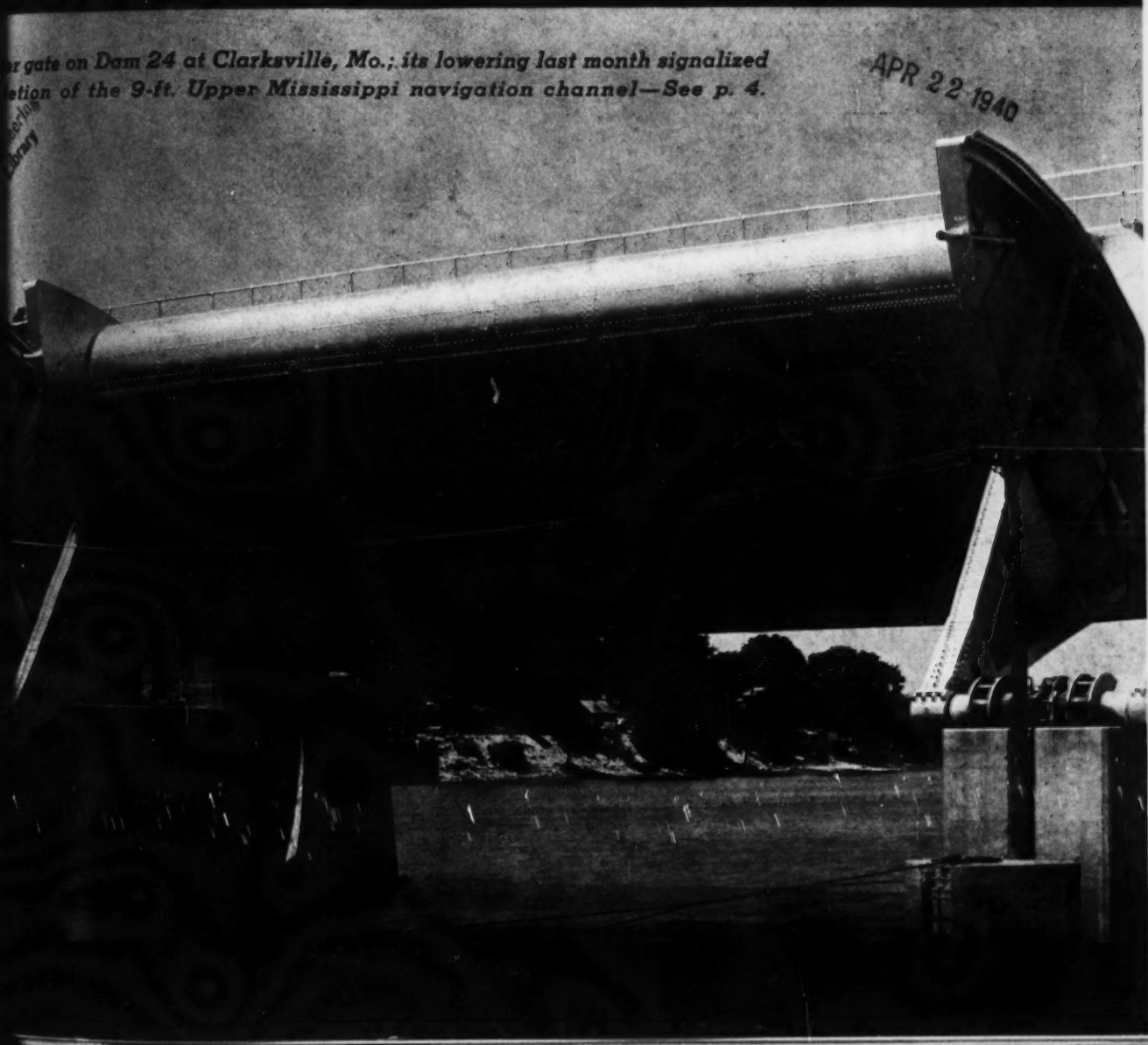
NEWS



r gate on Dam 24 at Clarksville, Mo.; its lowering last month signalized etion of the 9-ft. Upper Mississippi navigation channel—See p. 4.

APR 22 1940

When Minutes mean Dollars— and even Lives!

A FLOOD TO STEM! Action is imperative—mobility is essential—and it's a MICHIGAN that meets another emergency, as described in this unsolicited letter.

SAVING DOLLARS and time is an every day accomplishment for this modern Truck Shovel-Crane—and there's plenty of "plus-performance" ready for the pinches! Get the full facts and figures—Write for WORK BOOK E-40 today!

COUNTY OF YOLO
Woodland, California

March 7, 1940.

Spears Wells Machinery Co.
1832 West Ninth Street
Oakland, California

Attn: Mr. George Sievers

Dear Sir:

During the recent flood conditions in Yolo County your Michigan truck Shovel played a very important part in protecting the town of Knights Landing from flood waters of the Sacramento River.

On the evening of February 29th the water reached the level of the Levee and it was necessary to sack the levee for about 1000 feet. At this time the only means of loading and hauling dirt was by use of hand shovels - our Michigan Shovel being 25 miles away. At 12:00 O'clock mid-night we called Mr. McCoy, foreman in Road District 2 to bring the shovel to Knights Landing immediately. It was necessary for Mr. McCoy to get his operator and drive 10 miles to the point where the shovel was located.

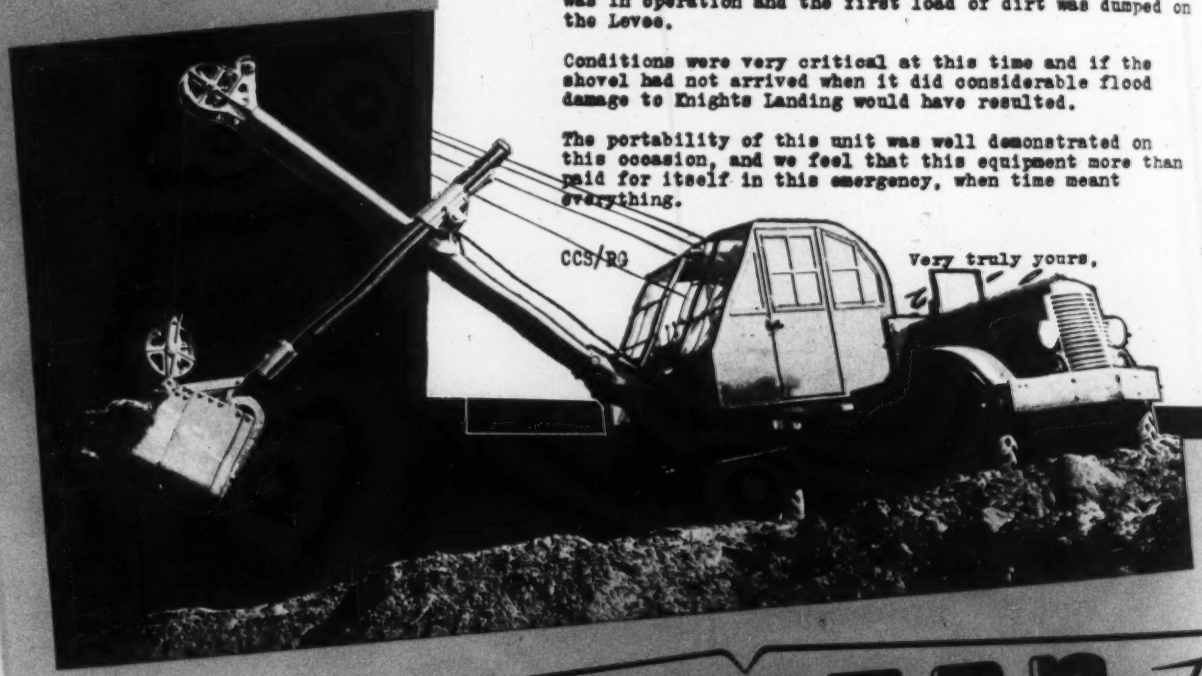
At 2:00 A.M. just two hours after our call the Michigan was in operation and the first load of dirt was dumped on the Levee.

Conditions were very critical at this time and if the shovel had not arrived when it did considerable flood damage to Knights Landing would have resulted.

The portability of this unit was well demonstrated on this occasion, and we feel that this equipment more than paid for itself in this emergency, when time meant everything.

CCS/RC

Very truly yours,



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America's Truck Shovel Specialists

MICHIGAN POWER SHOVEL CO., BENTON HARBOR, MICH., U. S. A.

ENGINEERING NEWS-RECORD

NEWS

Volume 124 APRIL 18, 1940 Number 16

NOTES ON THE NEWS

Quick Surveys of Construction Events

▶ The final report of the Federal Coordinator of Transportation holds that highway transportation as a whole is paying its way. Waterways get a subsidy of $128,528,000 annually.

▶ An expenditure of $60,000,000 on the Rio Grande for irrigation of 715,000 acres has been recommended in a report to the Secretary of State by the International Boundary. Work would include construction of a dam, hydro-electric plant and canals.

▶ Canalization of the Upper Mississippi River has been completed at a cost of $170,000,000 by the U. S. Engineers. A 9-ft. channel is now provided all the way to the Twin Cities.

▶ Residents of Philadelphia will vote April 23 as to whether $18,000,000 of bonds should be issued to rehabilitate the city's waterworks system.

▶ The extent to which the wage-hour law applies to engineering employees may be clarified as the result of a study started last week by the Wage-Hour Administration. The Administration never has made any clear-cut finding as to just where engineering employees stand with respect to the act.

▶ For the third consecutive week private engineering construction awards exceed respective 1939 values, current week's total being almost double a year ago. Private construction is 12 per cent above the corresponding period last year, but public construction is below last year.

▶ Extension of the Pennsylvania superhighway to Philadelphia is to be considered at a special session of the Pennsylvania state legislature. With the Federal Government expected to supply funds for the work, there is little doubt the project will be approved.

Road Transport Not Subsidized

Highway transport is now paying its way through taxes and fees according to the final report of the Federal Coordinator of Transportation submitted to Congress last week

Highway transportation as a whole is now paying its way through taxes and motor vehicle fees, according to the final report of the Federal Coordinator of Transportation, Joseph B. Eastman. Eastman now is chairman of the Interstate Commerce Commission.

"For all practical purposes," the report states, "motor vehicle users as a class have paid their way since 1927." This result is obtained by deriving percentages of the cost of highways that may properly be charged to vehicle transportation, the remainder being charged to social usefulness of roads. In recent years, the report finds, transportation should be charged with 83 per cent of the cost of state highways, 34 per cent of the cost of secondary roads, and 30 per cent of the cost of

(Continued on p. 6)

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Milwaukee Loses Appeal In Activated-Sludge Case

The federal circuit court of appeals at Chicago April 10 refused to permit the city of Milwaukee to re-open the sewage patent infringement case favoring Activated-Sludge, Inc., which has been in the courts for the past ten years. In July, 1938, the court ruled that the city was to pay $818,000 to Activated-Sludge in four installments. Following the decision of April 10, James L. Ferebee, chief engineer of the Milwaukee Sewerage Commission, paid the last installment and closed the case.

The appeal request was based on subsequent findings which were thought to indicate that the original action had not been brought by the proper plaintiff.

• • •

Large Water Improvement Advised for Philadelphia

A $19,000,000 program to rehabilitate Philadelphia's waterworks has been recommended to Mayor Lamberton of that city by Nathan B. Jacobs, president of Morris Knowles, Inc., consulting engineers. The work includes reconstruction of the present rapid sand filters, new provisions for chemical feed and mixing, and other improvements at the Belmont station at a cost of $1,860,000; similar work at the Queen Lane station costing $3,072,000; and improvements at the Torresdale station costing $4,720,000 or $6,215,000, depending upon what changes are made.

On April 23 residents of Philadelphia will vote on whether the city should issue $18,000,000 in bonds for the work.

New Driving Record Made At Carlton Drainage Tunnel

Tunneling records don't last long these days. In the 31-day period from midnight of Feb. 29 to midnight March 31 the single heading on the Carlton Drainage Tunnel at Cripple Creek, Colo., was advanced 1,735 ft. or an average of 56 ft. per day. This progress exceeds that made in a similar period of time by Walsh Const. Co. at Shaft 4 of the Delaware Aqueduct by 116 ft. (*ENR*, Feb. 22, 1940, p. 7). The heading, 8x9 ft. in section, is in hard Pikes Peak granite, requiring no timbering. Indicative of what is to come, the advance average 65.6 ft. per day the last week in March, and 69.6 ft. per day the first seven days in April. On Apr. 6 a new record of 74 ft. was made in 24 hr.

Carlton Tunnel is being driven by the Golden Cycle Corp. John Austin is superintendent, J. C. Farmer is engineer.

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Owen D. Young to Study Transportation Problem

Appointment of Owen D. Young, until recently chairman of General Electric Co., as member of a committee to make a study of the transportation problem was announced last week. The study is to be made by the National Resources Planning Board (formerly National Resources Committee) at a cost over the next year and a quarter of about $90,000.

Young's assignment is rather indefinite as yet. It is not yet clear whether he will head the committee making the study, though this is probable. And it is not even certain that the study will be made. The Senate version of the revised Interstate Commerce Act, hung up in conference for nearly a year, contains a provision creating a board to make a one-year study of interrelations between forms of transport and subsidies to transportation. If this should be retained in the final bill, NRPB would drop its study; it is of course not unlikely that Young might be appointed to such a board.

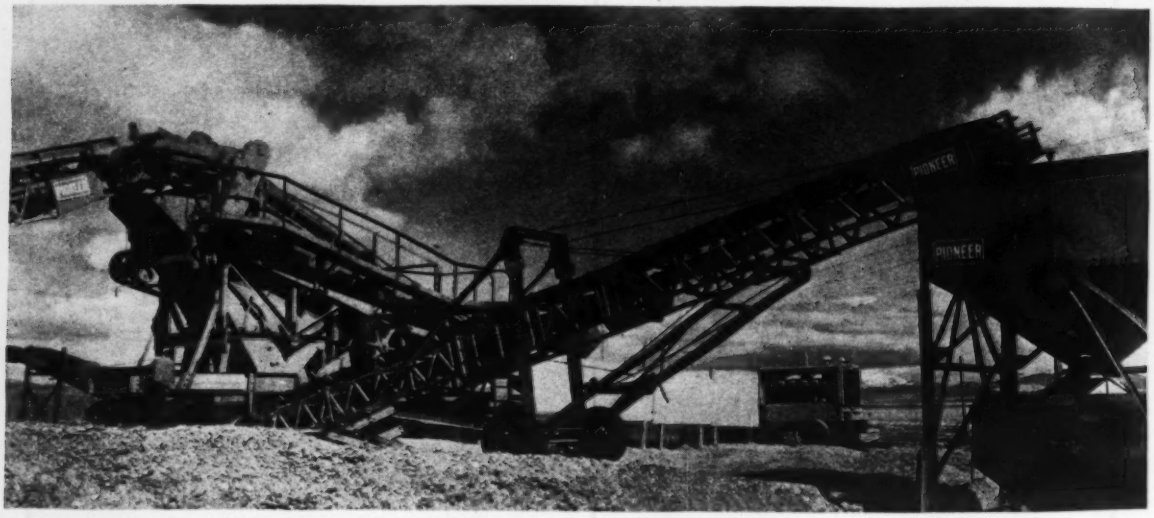
Whoever makes it, the study will in any case be essentially a continuation of the Eastman report on transportation, the last installment of which was released last week as a four-volume report on subsidies to all forms of transportation.

Demonstrations Feature Acetylene Meeting

The high spot of the 40th annual convention of the International Acetylene Association, held at Milwaukee Apr. 10-12, was a 45-minute demonstration of the latest oxy-acetylene processes of bending, descaling, cutting, cleaning and welding.

First on the show was straightening a kinked 15-in. beam by applying heat with two large torches to the web and then the flanges at the point of kinking. Next a 3-in. pipe was bent with a wrinkle bend through the application of heat and pressure. Fast welding of a 12-in. pipe was next done with a four-flame torch. Machine cutting of plates was shown by first using a two-torch machine that cut a double bevel in a 1-in. plate; then a U-groove was cut around the edge of a circular plate by a single torch. Scale was cleaned from a steel billet, preparatory to forging, by a special multi-flame torch tipped with hard material so that the operator rubbed the scale off with the torch as it was loosened by the effect of heat.

The show ended with a demonstration of flame planing, cleaning and dehydrating the surface of a structural beam with a multi-flame torch 12 in. wide.



LARGEST PORTABLE GRAVEL PLANT ON NEVADA HIGHWAY PROJECT

FREDERICKSEN & WESTBROOK, of Sacramento, Calif., are pushing their Nevada state highway project near Lovelock, Nev., with the largest all-purpose roadside gravel plant ever put on wheels. From 350 to 400 tons of processed gravel roll off the end of the delivery belt every hour, the exact output depending upon the supply of trucks available. About 20 per cent of the material is being crushed, and the plant is equipped to produce all-crushed chips for surface seal from oversize material along with the road gravel.

The plant, designed and built by Pioneer Engineering Works, Minneapolis, is mounted on six sets of 10.5x20-in. pneumatic tires on three axles with equalizers between the rear axles, and all axles equipped with air brakes. The two 30-in. conveyors, for feed and delivery of materials, are carried on pneumatic-tired mast trucks which form a bed for transporting the conveyors. The contractor dismantles, moves and sets up the plant in less than 24 hr., losing only one day's operations. One 160-hp diesel engine furnishes all power for the plant through a belt drive to the several units.

WASHINGTON HIGHLIGHTS

Special reports by Paul Wooton

A DRIVE is developing in the Senate for more reclamation money than was provided by the House in the Interior Department appropriation, now pending in the upper chamber. Senators Norris and Hayden, claiming to express the views of a large number of Congressmen, last week urged the President to submit additional budget estimates to permit faster development of reclamation.

FEW ITEMS of interest to the construction industry appear in the reorganization plan number four, presented by the President last week. Transfer

(*Continued on p. 11*)

Applicability of Wage-Hour Law To Engineering Employees Studied

Hearings on redefinition of exempt groups started last week by Wage-Hour Administration

Applicability of the wage-hour law to engineering employees has been discussed at the hearings on the redefinition of the executive, administrative, and professional exempt groups which were started last week by the Wage-Hour Administration. Although the hearings are concerned only with the wholesale distributive industries, technical employees are involved both because of the broad nature of the exemptions proposed by some witnesses and because some engineers are employed in those industries. Montgomery-Ward, for instance, maintains a large drafting room; a witness for the company said they did not regard draftsmen as exempt but did consider the drafting-room head an executive. Pittsburgh Plate Glass Co. employs a number of draftsmen at $30 per week in their branch warehouses to sketch store-fronts and considers that these should be exempt.

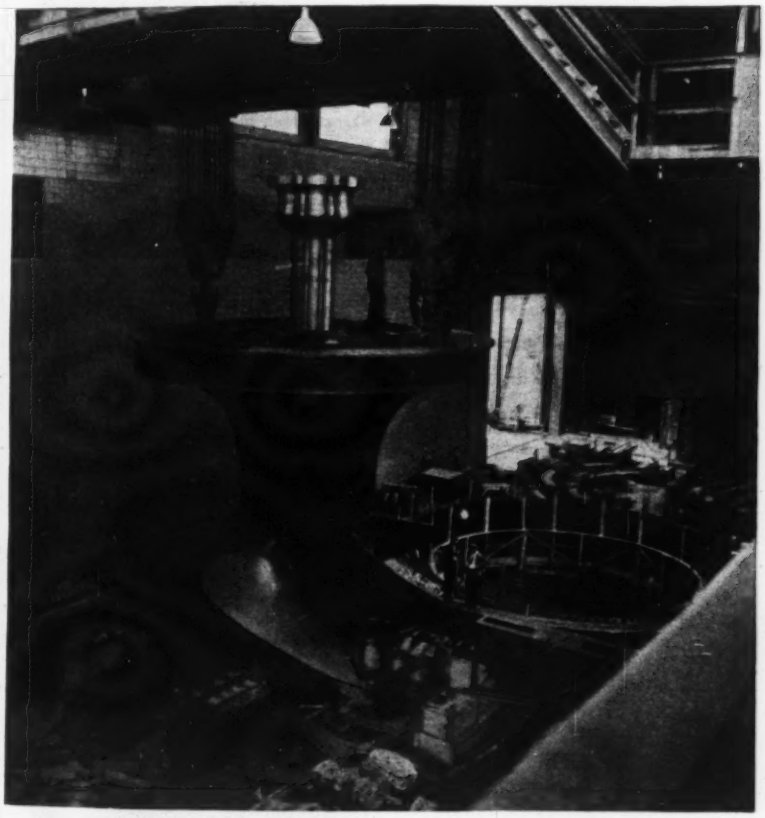
Broad definitions proposed

Many of the definitions proposed by industry witnesses, though not aimed at engineers, are so broadly drawn that if accepted they would exempt nearly all technical employees. Thus the American Retail Federation would treat as an executive any employee required to have "technical and non-manual skill." The Southern States Industrial Council would exempt as administrative white-collar workers "regularly employed on a straight salary basis and given vacations and sick leave with pay." Administrative employees, now required to have power to hire and fire, would be made by the Shell Oil Co. to include all who "assist the executives in putting into effect policies . . . and exercise discretionary powers."

Scherer opposes changes

The only witness specifically concerned with technical employees was Marcel Scherer representing the Federation of Architects, Engineers, Chemists and Technicians, CIO. Scherer opposed any changes in the definitions, asserted that professional employees are not professionals in the commonly accepted sense of independent agents working for a fee, said their conditions of employment differed little from those of skilled workers such as tool and die makers, and quoted D. B. Steinman's statement that "Most engineering work . . . is routinized group work in large organizations." Scherer agreed with the Montgomery-Ward position that drafting room chiefs are exempt, but held that the Pittsburgh Plate Glass draftsmen ought to be covered under this law.

The FAECT is at present pushing charges under the wage-hour law against three New York firms, The Lummus Co., refinery contractors, Lockwood-Green, and the Ford Instrument Co., and also has another case involving technical employees of the White Motor Co. Uncertainty as to the proper classification of engineers under the Wage-Hour law has been a source of confusion for a long time.



TURBINE RUNNER READY FOR THIRD UNIT AT CHICKAMAUGA DAM

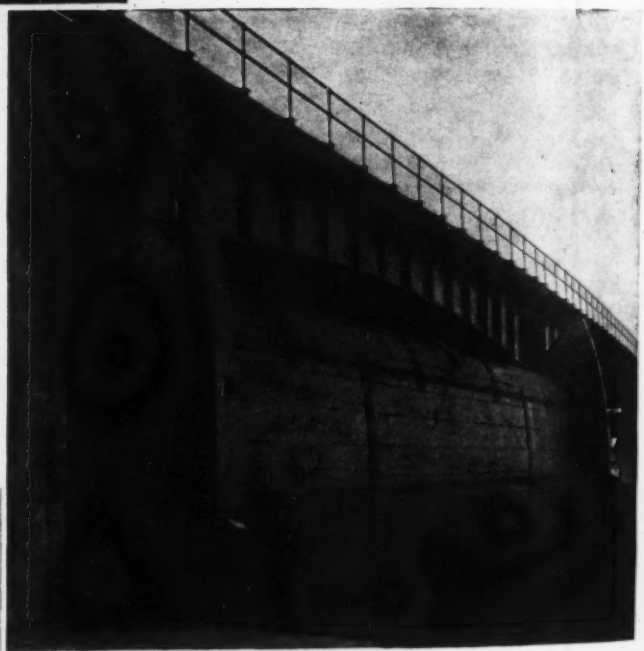
THE TURBINE RUNNER for generating unit No. 1 for TVA's Chickamauga Dam on the Tennessee River a few miles above the city of Chattanooga is being installed. Three 27,000 kw units will comprise the initial installation of generating equipment at Chickamauga, unit No. 3 having been placed in operation March 4 and unit No. 2 being almost complete.

Closure of Chickamauga Dam was effected and storage of water began on Jan. 15. The dam, 129 ft. high and 5,794 ft. long, will create a reservoir of about 37,000 acres to extend 59 miles upstream to Watts Bar Dam.

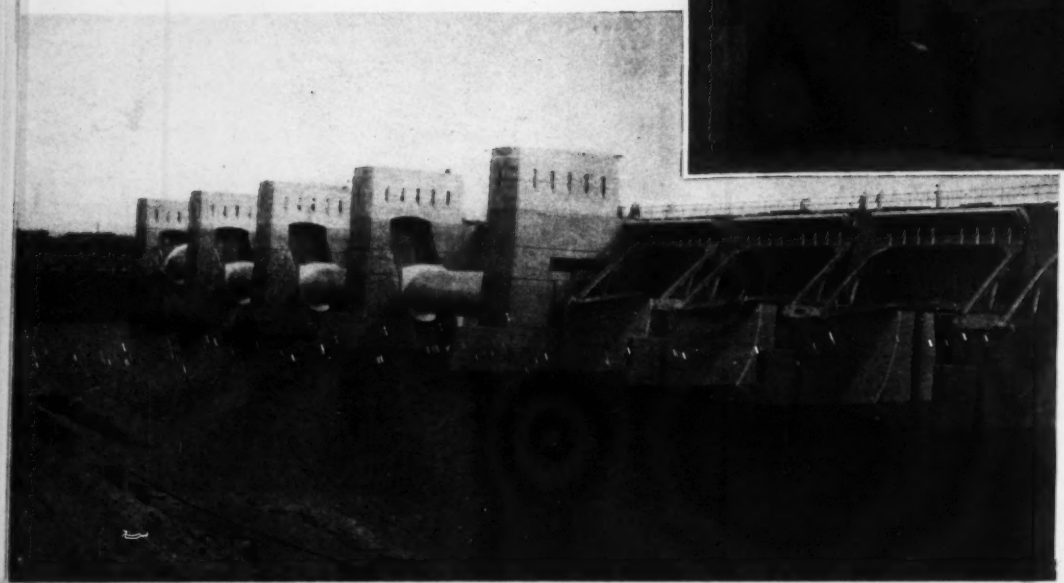
9-Ft. Canalization of

***CONTROL** of the Upper Mississippi is provided by 26 dams with locks spaced about every 26 miles along the stream. Keokuk Dam, completed in 1913 for power purposes, plays an important part in the system.*

***AN** 80-ft. submersible Tainter gate (below) used in the last dam marks great advancement in Tainter gate design over the simple 35-ft. gates first constructed.*



***THE FOUR** 80-ft. roller gates and the several 40-ft. Tainter gates shown below are a part of Dam 16. Note the difference in the Tainters from the gate above. Both views are upstream.*



# of Upper Mississippi River Completed

PLACING IN OPERATION of Dam 24 on March 13 marks completion of the 9-ft. canalization of the Upper Mississippi River at a cost of $170,000,000. Channel depth from the mouth of the Missouri to Minneapolis, a distance of 658 miles, is now controlled by a series of 26 dams with locks, including Keokuk Dam, completed in 1913 as a private power project, and two dams built at the Twin Cities for navigation purposes by the federal government before Congressional approval of the present project. The dams are spaced about 26 miles apart with the height between normal upper and lower pools averaging 12.5 ft. Maximum lift at any dam is 38.2 ft. (at Keokuk); the minimum is the 5.5-ft. difference between upper and lower pools at Dam 5A at Winona, Minn.

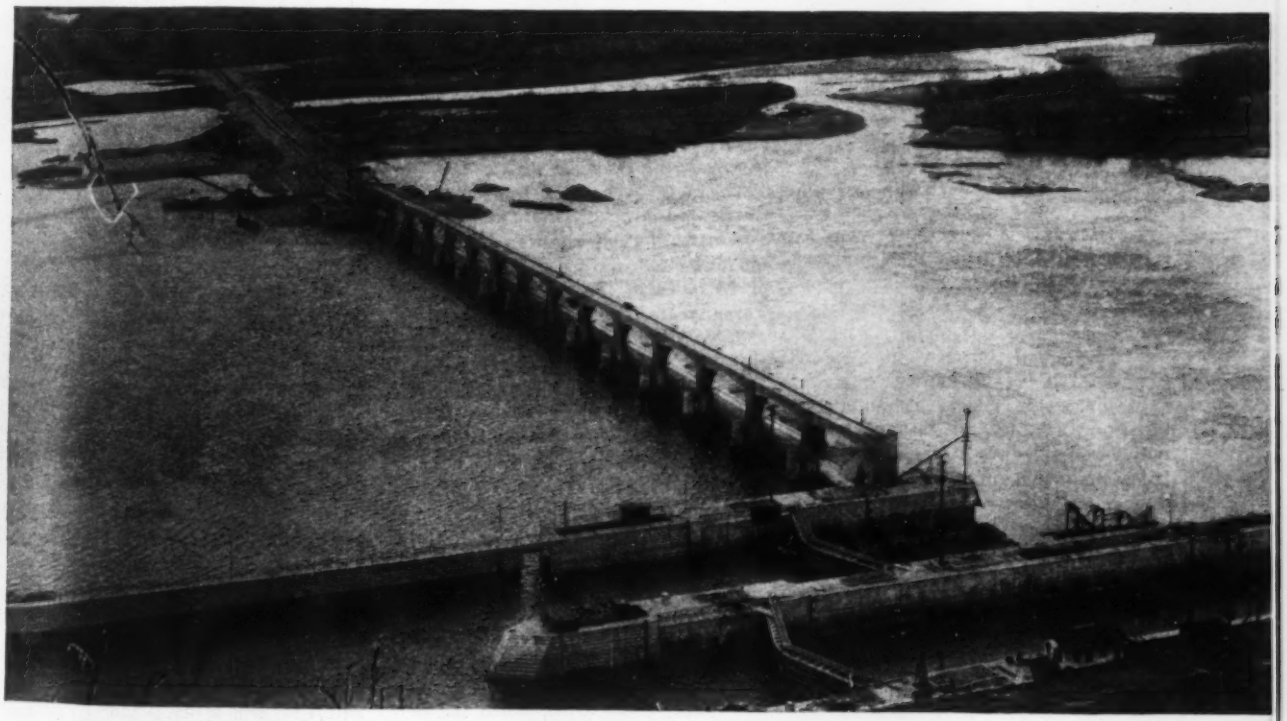
The movable sections of the dams are made up of Tainter gates, roller gates, or a combination of the two. Besides the section surmounted by gates, a typical dam comprises a standard 110 x 60-ft. lock; one set of gates for an auxiliary lock, and a fixed section. This latter consists largely of non-overflow earth dykes, but in several cases an ogee section or an overflow dike section has been built.

At Rock Island, one of the first projects completed, ice discharge is underneath all rollers except the two end ones where it is accomplished by skimming action. Because this was found insufficient for removal of heavy ice and required very large gate openings, resulting in excessive reduction of pool elevation, rollers designed later are capable of being lowered several feet below upper pool elevation for passage of heavy ice over the top. Still more recently, 80-ft. submersible Tainter gates have been developed and found so satisfactory that no roller gates are included in Dam 24, the last dam placed under construction.

Operating the dam for navigation purposes will provide little flood control. Power is also to be of minor importance with dams built under the present program, none being developed at some and at others only enough for the operating machinery of the dam and the gates of the lock.

Traffic on the section of the river developed has increased from 1,544,000 tons in 1935, to 2,599,000 tons in 1938. No figures are available for the calendar year 1939, but traffic is thought to have continued to increase.

The work was done by the St. Paul, Rock Island and St. Louis districts, U. S. Engineers.



WHEN THE GATES of this dam, Dam 24, at Clarksville, Mo., were lowered March 13, canalization of the Upper Mississippi was completed. Fifteen 80-ft. submersible Tainter gates such as that illustrated on the front cover and on the opposite page form the movable section of the dam. The upstream gate of a 110x600 ft. lock is shown in the immediate foreground. Also shown is one set of gates for an auxiliary lock to be completed when traffic requires.

No Road Subsidy

(Continued from p. 1)

city streets—an average of 48.5 per cent of the cost of highways. For earlier years smaller figures were found.

When the results are broken down by classes of vehicle, it is found that the passenger car exactly pays its way; certain types, notably the 1½-ton truck, pay less than the share of the cost chargeable to them; while others overpay. If only those classes of vehicle which pay less than their portion of the cost are considered, with no account taken of offsetting overpayments, a total subsidy of $8,000,000 can be considered as having been paid to operators of these types in 1937.

The subsidies to waterways, reduced to an annual basis, amount in recent years to $128,528,000, while the annual subsidy to the railroads is $35,635,000. This latter figure takes little account of the old land grants, the effect of which has long been dissipated, but consists largely of RFC and PWA loans.

The fact that waterway and highway users do not pay any taxes on their right of way as the railroads do cannot be considered as a subsidy, the report holds. It is admitted, however, that this factor is relevant in comparisons of the railways with other forms of transport, and for this purpose the taxes which would be paid if these facilities were privately owned have been computed on the basis of a 1.25 per cent tax rate.

Highway payments over cost

When highway users are considered as a whole, it is found that the amount by which highway payments exceeds highway costs more than offsets this theoretical tax. If only those types of vehicle which fail to pay their way are considered, the theoretical tax underpayment amounts to $58,000,000 per year.

The tax underpayment for waterways is set at $20,220,000.

In the motor vehicle computations, the 1 per cent federal gasoline tax is not considered, being treated as a contribution to general revenues, and for the same reasons road tax receipts diverted to other uses are disregarded.

• • •

Typhoid Causes Deaths At Manteno, Ill. Hospital

Three deaths have resulted from recent cases of typhoid at the Manteno, Ill., state hospital for the insane. Source of this new outbreak at the hospital has not been determined. Last summer more than fifty deaths resulted from typhoid at the institution.

Charles Clark New Head Of New York Water Supply

Charles M. Clark, former deputy chief engineer of the Board of Water Supply of New York City, was appointed chief engineer on April 9 to succeed the late Walter E. Spear, as announced briefly in these pages last week. At the same time, Roger W. Armstrong, department engineer in the New York headquarters of the board, was appointed deputy chief engineer to succeed Clark.

Clark was born in Potsdam, N. Y., in

CHARLES M. CLARK

1873, was educated at the Potsdam Normal School and entered the city service in 1893 with the Aqueduct Commission on surveys for the Croton Reservoir, progressing through the positions of axeman, rodman, leveler and transitman to assistant engineer in charge of the Cross River Dam in 1905. In 1908 he was transferred to the Board of Water Supply and in 1912 was made division engineer of the Croton division, covering the construction of 13 miles of the Catskill Aqueduct. Three years later he was placed in charge of all work of the southern aqueduct department (except Kensico Dam) between Peeskill and Hillview reservoir. When the city went to the Schoharie watershed for an additional supply, Clark served as division engineer from 1918 to 1921, supervising construction of the southerly half of the 18-mile Shandaken tunnel. In 1921 he was designated department engineer in charge of the 28 siphons needed to bring the Catskill aqueduct up to its full capacity. In 1927 he was made department engineer in charge of the 20-mile City Tunnel No. 2, the cost of which was nearly $60,000,000. When the Delaware-Rondout system was begun in 1936 he was made deputy chief engineer.

In his new position he will be in charge of all engineering work on the Delaware-Rondout system, which will cost about $300,000,000. About $175,000,000 of work is now under contract.

Armstrong was born in Boston in 1880, graduated from Tufts College in 1902, and after four years of work with John R. Freeman joined the Board of Water Supply, first as a designer and then as construction engineer. During the World War he was in charge of water supply and sewage disposal at Camp Upton and after the war he went to Athens on water supply work for Ford, Bacon & Davis. He returned to the Board of Water Supply in 1921 for field work on the Delaware system, subsequently becoming division engineer on the Narrows siphon and later senior division engineer on City Tunnel No. 2. He was appointed department engineer in 1936 when the Delaware work started.

• • •

Rhode Island Wins Highway Safety Award

When the National Safety Council's annual awards were made in Chicago early this month the state of Rhode Island won the grand prize for having reduced its traffic death rate to only four for each 100,000,000 vehicle miles, or less than one-third the national average. Fatalities numbered 66 in 1939 as against 74 in the previous year. Of the 134 persons arrested as the result of accident investigations, 133 were convicted; of the 1,232 persons arrested for all types of traffic violation, 1,230 were found guilty.

Kansas City was announced winner of the grand award for cities of 250,000 to 500,000 population. Fatalities were reduced in Kansas City to 32 as compared to 69 a year previous, or a reduction of 53 per cent. Out of 2,974 arrests as the result of accidents, convictions totaled 2,271.

Oklahoma was the winner for the Southern division, Minnesota for the Midwestern division, and Washington for the Western division. Among cities, Cleveland was the winner for cities of over 500,000 population; Worcester, Mass., in the 100,000 to 250,000 group; Pontiac, Mich., in the 55,000 to 100,000 class; Clarksburg, W. Va., in the 25,000 to 50,000 size, and Aberdeen, S. D., in the 10,000 to 25,000 group.

In determining the rating of a city or state, fifty points were allowed for low death rates and for reduction of the rate below the average for the three preceding years, five points for completeness in accident reporting, ten points for safe traffic planning and construction, fifteen points for effective traffic law enforcement, and ten points each for development of child safety programs and for public educational programs.

Construction to Start Soon On $4,000,000 Florida Span

With the internal improvement board of the state of Florida having given the state road department a right-of-way across Tampa Bay, construction is expected to start soon on a $4,000,000 bridge between Tampa, St. Petersburg and Clearwater, Fla. Bids will be asked, it is said, in about 45 days with work to start soon afterward. The bridge, to be about 7½ miles in length, is to be a toll-free span located between Davis Causeway and Gandy Bridge, privately owned toll bridges spanning Tampa Bay. The U. S. Public Roads Administration is to supply half of the cost of the span.

• • •

Water Company Guilty Of Criminal Negligence

A coroner's jury at Spangler, Cambria County, Pa., has ruled that the Northern Cambria Water Co. is guilty of "criminal negligence" and ruled that the water distribution system "was contributory to the deaths" of three Spangler citizens. A physician holds that the three died of complications following gastroenteritis, a form of dysentery. Other physicians testified that more than 300 persons in the community of 2800 were stricken by the malady during February and March.

Lewis K. Scheffer, of the Pennsylvania state department of health, said the company's chlorination system was found to be working improperly when the department investigated the sudden outbreak of gastroenteritis.

• • •

Virginia Secondary Road Fund Totals $8,500,000

A total allocation of $8,500,000 for secondary roads in 97 Virginia counties has been announced by Henry G. Shirley, state highway commissioner of Virginia, for the fiscal year beginning July 1. Of the total, $8,150,000 comes from state funds and $350,000 from the four-year revolving fund for replacement and modernization of old bridges.

• • •

Large Rio Grande Program Proposed by Commission

In a recent report to the Secretary of State the International Boundary Commission has recommended expenditure of $60,000,000 for construction of a dam and hydro-electric plant on the Rio Grande at a point 170 miles above Brownsville, construction of an irrigation canal on the American side to provide water for 715,000 acres, and construction of feeder canals and reservoirs. The project was drawn up following a meeting of interested engineers at the offices of the International Boundary Commission at El Paso.

The report is signed by C. M. Ainsworth, J. L. Burkholder, Robert J. Cummins, J. L. Lytel, Alfred Tamm, R. J. Tipton and Ben F. Williams.

The work of the commission is under the Department of State.

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Highway Department Work Praised in Washington

Answering grand jury criticisms of the Washington state government, Governor Martin praised the state highway department for handling more than $24,000,000 in state and federal funds during 1939 "without the slightest trace of graft, collusion, faulty materials or discrimination in the awarding of contracts." The governor announced his intention of appointing a five-man commission to investigate budgeting and auditing, which figured in the grand jury's report on the highway department.

"Political opportunists, clever politicians and three or four partisan newspapers" were blamed by Martin for attempting to use the grand jury for discrediting the state administration.

• • •

Southern Gas Company Plans Long Pipe Line

Southern Natural Gas Co., Birmingham, Ala., has announced a $3,000,000 expansion program to include construction of an 80-mile pipe line paralleling parts of the existing system which extends from Monroe, La. across Mississippi and Alabama via Birmingham to Atlanta, Ga., with branch lines extending to Macon and Milledgeville, Ga. The additional facilities are to increase capacity of the company's system by 30,000,000 cu.ft. per day. The company also recently announced plans to extend its system from Calhoun, Ga. to supply Chattanooga, Tenn. This calls for construction of a 45 mile 8-in. line with a new compressing station at Cedartown, Ga.

Reclamation Bureau Gains in Fight Over Flood Control-Irrigation Job

President recommends San Luis work in Colorado be done by Bureau instead of Corps of Engineers

The Bureau of Reclamation won a round last week in its battle with the Corps of Engineers over responsibility for construction of joint flood control-irrigation projects. In transmitting to Congress reports by the two agencies on the San Luis project on the Rio Grande in Colorado, the President recommended that the work be turned over to Reclamation. As in the case of the Kings River project in California (*ENR*, Feb. 22, 1940, p. 285), the two reports on this project have been held up since last summer because of disagreements between them. This project differs from Kings River, however, in that a larger part of the cost is allotted to irrigation, whereas at Kings River the elements are equally divided.

As reported by Reclamation, the project calls for construction of the Wagon Wheel Gap Dam impounding 1,000,000 acre-ft., two small reservoirs on the Conejos River, and a small trans-mountain diversion from the Colorado River basin to the Rio Grande basin. Of the total $17,465,000 cost, $10,585,000 would be allocated to irrigation and would be repayable over forty years by water-users on 400,000 acres of developed land around Monte Vista. The project would be operated by the Bureau. No present power installation is contemplated.

Beyond the question of who should build the project the final Engineer Corps report differs from the Bureau's recommendations in that it would have the local interests operate the project and that irrigation cost would be repaid by a lump sum equal to the present capitalized value of the forty annual payments, without interest, required under reclamation law.

• • •

First Section of Ross Dam Completed by Seattle

The first section of Ross Dam, which is being built on Skagit River for the city light department of Seattle, Wash., has been completed. Concrete has been carried to El. 1365 and the timbered crib to El. 1380, with wing walls of concrete on either end to El. 1391.

General-Shea-Columbia Construction Co. was the general contractor for the first unit with W. D. Wolfendale, resident engineer on the dam for the light department. W. J. McKean is acting superintendent for the light department and Glen H. Smith, outside engineer.

From San Francisco where he erected the huge cantilever of the Bay Bridge, with a stop-over to build a bridge at Redding, to the icy shores of the Mississippi River is the recent itinerary of **Ed Nimmergood,** veteran superintendent of the American Bridge Co. He didn't want his picture taken but happened to be in front of the camera when it was pointed toward his job, the new five-span steel tied arch bridge at Rock Island, Ill.

An expert in the treatment of bad water is **J. P. Brownstead,** superintendent of waterworks at Ashland, Ky.; he has to be because Ashland's supply comes from the grossly polluted Ohio River. Recently, he reports, a barge of gasoline overturned near the waterworks intake with the result that the city's entire distribution system had to be drained in order to remove the "high test" flavor to which consumers raised strenuous objection.

John O. McWilliams, as county engineer of Cuyahoga County, gave Cleveland long-needed traffic relief and the country at large the outstanding bridge job of last year when he brought about effective cooperation among city, state, county and PWA in building the Main Ave. Bridge and its lakefront express highway approaches. McWilliams is also chairman of the Ohio state board of registration for professional engineers and surveyors.

MEN AT WORK

It was a busy day for these consultants when this picture was taken. They are: **W. F. Durand,** of Stanford University; **C. H. Paul,** of Dayton, Ohio, and chairman of the board; **R. V. Meikle,** chief engineer of the Turlock (Calif.) Irrigation District, and **Charles P. Berkey,** professor of geology at Columbia University. They were visiting the site of Shasta Dam on the Sacramento River in California. The dam—for flood control, power, and irrigation purposes—is being built by the Bureau of Reclamation as the major element in the Central Valley project. Need for the dam was shown by floods along the river causing $15,000,000 damage.

Philip Gray, (left), superintendent for Cleary Bros. Const. Co. on the St. Lucie Canal lock near Stuart, Fla., **C. Nelson** (center), senior engineer, U. S. Engineer Department, who is in charge of the canal and levee work around Lake Okeechobee in Florida for the Corps of Engineers, and **C. J. Smith,** resident engineer for the U.S.E.D. on the St. Lucie lock. The broad smiles are due to the fact that Smith just threw his sweater out of sight so that he would not be shown with a sweater on in Florida. Nelson has been on the Lake Okeechobee work since the federal government took it over following the hurricane of 1928.

MEN AND JOBS

FRANK E. SHIPY, building superintendent for Douglass Orr and R. W. Foote, architects, will represent the architects on the New Haven, Conn., $2,500,000 Dixwell Avenue low-rent housing project. JOSEPH GORDON, of New Haven, has been appointed chief inspector for the work, and WILLIAM J. MULVEY, also of New Haven, assistant inspector to work under the direction of Gordon. The latter two men will be paid by the New Haven Housing Authority.

CHARLES P. CASEY, assistant director of the Illinois State Department of Public Works and Buildings for six years, and acting director since the death of Director F. Lynden Smith, has been named director.

GEORGE W. MCCORDIC, who has been connected with PWA for the past six years, and most recently working as project engineer on Detroit's $23,000,000 sewage treatment plant and Wayne County's $2,000,000 sewage disposal system, has been appointed secretary-manager of the Port of Detroit Commission. He will have charge of the commission's program of coordinating private and public interests in improving the Detroit port. PAUL VAN BUSKIRK, engineer for the port commission, will continue his duties.

SAMUEL E. KLEIN, of Harrisburg, has a new position as engineer with the Pennsylvania General State Authority.

EDWARD J. POLITOSKE, Clearfield, Pa., has been appointed engineer with the Pennsylvania State Highway Department. ALFRED R. FRITUINGER, of Slatington, has left the department.

T. W. RAGSDALE, principal engineer at Fort Peck, Mont., with the U. S. Engineers, on April 1 was transferred to Portland, Ore. Ragsdale, going to Glasgow, Mont., in 1933 to assist in the organization of preliminary construction of the dam, was one of the first engineers to start work on the project. As assistant chief of the operations division, he has been active in the present construction program.

CAPT. GORDON E. TEXTOR, general staff school, Fort Leavenworth, Kans., is the fifth army officer to be assigned to the engineering staff at Denison Dam. Other officers on duty there are: CAPT. LUCIUS D. CLAY, district engineer; CAPT. ROLAND C. BROWN; LIEUT. JOHN H. ANDERSON, and LIEUT. ERLAND A. TILLMAN.

W. H. CHISHOLM, of St. Paul, has been added to the engineering staff for Koochiching County, Minn.

C. A. GREER, engineer with the Bureau of Reclamation at the Denver office for the past six years, has been transferred to the Grand Coulee project to take charge railroad relocation construction relative to the project.

FRED S. WITZIGMAN, graduate of Cornell College and the University of Iowa, has been transferred to Balboa, Panama Canal Zone, to be in charge of hydraulic research for the design of the new Panama locks. Following his graduation from the University of Iowa with a master's degree, Witzigman was employed by the U. S. Engineers on experimental work in the hydraulic laboratories of that school. Lately he has been working in the St. Paul district office in connection with the hydraulic experimental work carried out by the army engineers at the University of Minnesota.

W. B. BRANTLEY, chief engineer for the Georgia State Highway Department since October 1938, has resigned to enter private work. WARREN R. NEEL, assistant state highway engineer, has been appointed as Brantley's successor, effective immediately. Brantley, when appointed chief engineer to succeed E. A. STANLEY was the youngest man ever named to that post by the highway board. Before the appointment he had been with the highway department ten years. Neel, who helped organize the department, served as its first chief engineer or from 1916 to 1929. Lately he has been employed as engineer by the PWA.

JAMES H. CURTIS, who has been PWA engineer in charge of the Indian Creek flood control project at Council Bluffs, Iowa, has opened an office at that city to engage in private practice. Curtis was formerly engineer of Floyd County, Iowa.

EDWARD MCNAB has accepted a position at Chepstow, Ont., as road engineer for the Township of Greenock.

STANLEY LEVITT, graduate of M.I.T. in 1936, has left the employ of the bridge department of the Louisiana State Highway Commission to begin new duties as junior engineer with the structural design section of the U. S. Engineers at New Orleans, La. Prior to his service with the commission, Levitt had been employed by Waddell & Hardesty, New York City, and Ash-Howard-Needles and Tammen, Kansas City.

PAUL L. HOLLAND, chief engineer of the Maryland Public Service Commission and former general chairman of the Baltimore Safety Council, has been appointed member of both the street traffic and the legislative committees of the council.

KARL L. ROTHERMUND, JR., assistant service director at Toledo, Ohio, and PAUL M. JONES, formerly associated with the engineering division of WPA, District No. 1, Toledo, Ohio, have been appointed field representatives of the Ohio Paving Brick Manufacturers Association, Columbus. Rothermund will have headquarters at Dayton and Jones at Ravenna.

B. M. HILL, of St. Stephen, N. B., a veteran civil engineer, has been re-elected to the Canadian Parliament from Charlotte County, N. B. Hill was first elected to Parliament in 1935, previous to that he was a member of the civil engineering staff of the New Brunswick department of public works, later provincial minister of public works, and a member of the New Brunswick Assembly.

HOWARD E. SMITH, district engineer at Rochester with the New York State Department of Public Works, has retired to be succeeded by ELMER C. LAWTON, assistant commissioner of highways since 1931. Succeeding Lawton as assistant commissioner at Albany is E. T. GAWKINS, for the past nine years assistant district engineer of the department at Babylon district office. Smith for a time served as division engineer of the Fifth Division. He attended Rensselaer Polytechnic Institute, Union College and the Massachusetts Institute of Technology, receiving a degree from the latter school in 1906. He joined the highway department in 1909.

DAVID J. CAMILLI, director at large of the Pennsylvania Society of Professional Engineers, has joined the Allegheny Asphalt & Paint Co. Sixteen years ago Camilli joined the engineering staff of Allegheny County, advancing to assistant designing engineer. Twelve years later he organized the engineering office of the clerk of courts of Allegheny County.

J. BRYON TUSANT, regional engineering inspector of the PWA at Boone, Iowa, has been appointed assessor of the city of Des Moines. Tusant was formerly president of the Master Builders' Association of Iowa and later of the Des Moines unit.

MEETINGS

AMERICAN WATER WORKS ASSOCIATION, Kansas City, Missouri, April 21-25.

ASSOCIATED GENERAL CONTRACTORS OF AMERICA, Spring Board Meeting, Schroeder Hotel, Milwaukee, Wis., May 6-9.

CONCRETE REINFORCING STEEL INSTITUTE, 16th annual meeting, The Homestead, Hot Springs, Va., Apr. 26-27.

REGIONAL AND LOCAL

ARIZONA SEWAGE AND WATER WORKS ASSOCIATION, annual convention, Tucson, Ariz., April 20-21.

PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS, Midwest Chapter, Grove City, Pa., April 20.

AMERICAN SOCIETY OF CIVIL ENGINEERS, Texas section, spring meeting, Galveston, April 26-27.

BUILDING CONTRACTORS ASSOCIATION OF NEW JERSEY, Elizabeth Carteret Hotel, Elizabeth, N. J., April 26.

AMERICAN SOCIETY OF CIVIL ENGINEERS, Mid-South Section, annual meeting, Little Rock, Arkansas, April 29-30.

PACIFIC NORTHWEST SEWAGE WORKS ASSOCIATION, Portland, Ore., May 8.

AMERICAN WATER WORKS ASSOCIATION, Pacific Northwest Section, Portland, Ore., May 9-11.

MARYLAND-DELAWARE WATER AND SEWERAGE ASSOCIATION, annual conference, Salisbury, Maryland, May 16-17.

MISSOURI RIVER VALLEY ASSOCIATION, Yankton, S. D., May 17.

AMERICAN WATER WORKS ASSOCIATION, New Jersey Section, spring meeting, Stacy-Trent Hotel, Trenton, N. J., May 22.

INTERNATIONAL FEDERATION OF ARCHITECTS, ENGINEERS, Chemists and Technicians, fifth national convention, Hotel Pennsylvania, New York City, May 31-June 2.

ELECTIONS AND ACTIVITIES

THE FIRST Western Public Works Congress, held in Los Angeles March 14-16, placed major emphasis on planning and programming with delegates from California, Oregon, Washington, Idaho, Utah, Colorado, New Jersey and Illinois being present. The Congress was sponsored by the American Public Works Association and the Leagues of Cities of the Western States. Jean L. Vincenz, commissioner of public works, Fresno, Calif., presided. Merrill Butler, deputy city engineer of Los Angeles, in the absence of Lloyd Aldrich, city engineer, outlined the public works activities of Los Angeles, and Alfred Jones, county surveyor described Los Angeles County public works operations. John S. Flockhart, principal assistant engineer, Newark, N. J. and president of the A.P.W.A., told of the objectives and activities of the association. The sixty separate agencies of the federal government constructing public works were described by Robert W. Hartley, technical secretary of the Public Works Committee, National Resources Planning Board. Other speakers were: James S. Dean, city manager of Sacramento, Calif.; Roy F. Bessey, consultant, of Portland, Ore., National Resources Committee; Walter H. Blucher, executive director of the American Society of Planning Officials; Huber Smutz, city planning director of Los Angeles; John G. Marr, city planning engineer, Oakland, Calif.; B. W. Matteson, district engineer, Public Roads Administration, Denver; and Walter N. Frickstad, city engineer of Oakland, Calif.

L. S. WERNLI was recently elected president of the Sioux City, Iowa, Construction League to succeed W. A. Klinger. Other officers are: Martin E. Ramsey, vice president; William A. McCorkindale, treasurer, and Lloyd E. Lewis, executive secretary.

VARNUM B. STEINBAUGH, chairman of the Michigan State Bridge Commission, was elected president of the Michigan Engineering Society at the organization's sixtieth annual meeting at Birmingham, March 31. John Hartman of Kalamazoo was elected vice president, Bruce Buchanan of Pontiac, secretary, and W. Bates Russell, of Birmingham, treasurer.

LEONARD N. WHITE of Dickinson & White, consulting engineers of Little Rock, has been elected president of the Arkansas Society of Professional Engineers to succeed D. A. MacCrea, who is a consulting engineer in Little Rock.

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Engineering Conferences

INDUSTRIAL CONFERENCE: School of engineering, Pennsylvania State College, State College, Pennsylvania, May 15-17.

TVA'S KENTUCKY DAM READY FOR CONCRETE PLACEMENT FOR LOCK

WITH EXCAVATION of 1,540,000 cu. yd. of earth and 88,000 cu. yd. of rock completed, concrete placement for a 110 x 600 ft. lock with a lift of 57 ft. is soon to start at Kentucky Dam (formerly Gilbertsville Dam) or TVA's largest structure. For the lock, dam, and powerhouse, 1,100,000 cu. yd. of concrete will be required, 100,000 more than for Norris Dam. Due to a deep gravel deposit at the site, the top of the runway will be as much as 160 ft. above foundation rock.

In the central left of the above picture, which is looking downstream, may be seen seven of 18 circular cells in place for the upstream arm of the first river cofferdam. Part of the downstream arm may be seen beyond the bridge. Six cloverleaf cells ranging in height from 90 ft. to 100 ft. will form the crosswall to close the cofferdam. For this work 80-ft. piling is being used with shorter pieces used to splice out at the top.

G. P. Jessup is project manager for the work and J. B. Hays construction engineer. T. B. Parker is chief engineer of the TVA and A. L. Pauls is chief construction engineer.

Washington Highlights

(Continued from p. 3)

to the Department of Labor of the functions under the Bacon-Davis Act (prevailing wage on construction) now exercised by the secretaries of Interior and Treasury means little. These officials were directed by the act to frame regulations for its operation; this job was completed long ago, and actual administration of the act has long been in the Labor Department. Soil and moisture conservation on lands administered by the Department of the Interior is transferred to that department from Agriculture's Soil Conservation Service. This move, which appears to reverse the centralizing tendency of the reorganization plans, is viewed in Washington as a sop to the Department of the Interior for its failure to obtain transfer of the Forest Service from Agriculture.

THE SENATE has passed and sent to the House a bill granting the consent of Congress to the negotiation of a compact dividing the waters of the Little Missouri River among the states of Montana, North Dakota, South Dakota, and Wyoming.

IN ACCEPTING the conference report on the Independent Offices Appropriation, the House last week agreed to a Senate amendment granting $710,000 to the National Resources Planning Board. When the bill first came before the House, a budgeted $1,060,000 for the agency was stricken out on the ground that creation of National Resources Planning Board had never been authorized by Congress.

CONGRESS has passed a measure authorizing replacement, at a cost of $350,000, of several locally-owned bridges displaced by canalization of the Rio Grande. The canalization work has changed the river channel in a number of places.

McLaughlin Air Service

TOLL PLAZA FOR QUEENS MIDTOWN TUNNEL AT NEW YORK

AUTOISTS bound to and from Manhattan via the Queens Midtown Tunnel under East River at New York City, will stop and pay toll in this wide depressed approach on the Queens side. The toll plaza is being built by the Thomas Cummins Const. Co. It leads into the land section, which is being built by Chas. F. Vachris, Inc. The Queens ventilating tower is under contract to the Cauldwell-Wingate Co. The river waters hide the active work of Walsh Const. Co., now engaged in placing the concrete lining in the shield-driven section of the twin tubes. The tunnel, being built by the New York Tunnel Authority, will be opened to traffic some time next year.

Testimony Heard In Technology Study

Preliminary hearings support those advocating large-scale government spending

Preliminary testimony in the monopoly committee's hearings on technology was directed as predicted (*ENR*, April 11, p. 487) along a line tending to support advocates of large-scale government spending on public works and other "capital" investments. Usual procedure when TNEC attacks a new subject is for some expert, usually Committee Economist Theodore J. Kreps, to lay out the economic framework of the problem, with subsequent witnesses filling in the details. Last week's introduction was built around the thesis that, contrary to popular belief, technical progress no longer increases the demand for capital—thus opening the way to the implied conclusion that government spending must fill in the gap to prevent an accumulation of idle money.

Taking a fresh line on a stale subject, Kreps emphasized that only about a third of all inventions are of a labor-saving nature. About 45 per cent introduce new kinds of goods, and, though they create problems through displacement of existing industries, they generally don't tend to reduce employment.

What was stressed before the committee was another class of invention . . . capital-saving. This is the invention which tends to reduce the investment required to produce a given output—in the simplest terms, a new $500 machine which will do the work of a former $1,000 machine. Examples are multi-plex telegraphy, cheap lighting permitting 24-hr. operation of plant, and geo-physical prospecting.

The auto industry, for instance, reached its peak of capital investment in 1926. Today, with substantially the same capacity, fixed capital is 20 per cent less. The electric utilities now have 50 per cent more output than in 1932 with a slightly smaller capital plant.

These facts throw considerable doubt, it was asserted, on estimates of a vast demand for capital goods based on comparisons between value of productive plant now and in 1929.

In addition to indicating a technological unemployment of money, this line of thought, of course, has considerable relevance to the employment problem. It makes questionable the common belief that labor-saving devices, by stimulating mechanization, will provide jobs in the capital goods industries for the workers thrown out of work.

OBITUARY

FREDERIC O. WHITMAN, field engineer for the Mason & Hanger Co., on the construction of Merriman Dam, met death by drowning in an inactive caisson on the work on April 8. A graduate of Lowell Institute of Massachusetts Institute of Technology, Whitman had held engineering and construction positions with Spencer, White & Prentis and Samuel R. Rosoff, Inc., in addition to his recent employers.

JAMES B. MITCHELL, 81, member of the Spokane construction firm of Mitchell Brothers, died in that city April 2. Mitchell built the original Spokane Falls & Northern R. R., many Spokane highways and foundations for some of the city's largest buildings.

PATRICK MCCADDEN, 87, pioneer railroad builder and levee contractor of Memphis, Tenn., died in that city April 7. McCadden is credited with building the old Choctaw line from Memphis to Oklahoma City, now part of the Rock Island R. R., and later the Memphis to Dyersburg line of the Illinois Central System. He also directed the construction of over 100 miles of levee between Memphis and New Orleans.

JOHN BELL MCRAE, 64, consulting engineer of Ottawa, Ont., died in that city April 8. Following his graduation from McGill College in 1898, McRae joined the Canadian Atlantic Ry. as a draftsman at Ottawa. Later he worked with C. H. Keefer, civil engineer of Ottawa, on hydro-electric work. In 1904 he joined McDougall & McRae, consulting engineers of Ottawa.

HENRY H. NORRIS, 67, personnel manager of the Boston Elevated Ry., died in Boston April 14. A graduate of Johns Hopkins and Cornell Universities, Norris was head of electrical engineering department at the later school from 1909 to 1913.

JAMES H. ATKINSON, 85, who retired 17 years ago after 47 years with the Bureau of Water at Pittsburgh, died April 6 in that city.

Other recent deaths include: JOHN S. ALBERICI, 66, building contractor of St. Louis; JOSEPH KEENAN, retired builder of Union City, N. J.; C. G. POOLE, connected with Gregory & Poole, Virgilina, Ga.; HANS HAUGEN, 80, former surveyor of Aitken County, Minn.; SAMUEL T. OLIVER, 54, building contractor of Greensboro, N. C.; BEN A. SAGE, 70, retired civil engineer at El Paso, Tex.; WILSON A. LANDUM, 79, retired building contractor of St. Augustine, Fla.; SIDNEY L. HARGETT, 68, Birmingham, Ala., building contractor; CLAUDE D. SMITH, 56, contractor of Birmingham, Ala.; FRED J. HATTMAN, 47, since the World War with the American Bridge Co. on erection, Emsworth, Pa.; F. H. WINSTON, 64, building contractor of Gainesville, Fla.; W. B. LAW, 59, building contractor of Kannapolis, N. C., for the past 12 years; JOHN T. FREEMAN, 65, construction contractor, Fernandina, Fla.; A. H. KENNEDY, 93, who retired as president of the Rockport, Ind., Water Co. a few months ago following 53 years of service with that firm; CORNELIUS STRAHM, 52, superintendent of the Dunkirk, Ind., waterworks for 17 years, Muncie, Ind.; BERNARD EUGENE SCHUBERT, 67, contractor and builder of Cos Cob, Conn., Miami, Fla.; L. E. CARMICHAEL, 57, contractor of Dillon, S. C.; CLARENCE A. FOOTE, 80, general contractor and builder of Mt. Morris, N. Y.; FREDERICK T. WARREN, 70, former city engineer of Tampa, Fla.; THOMAS D. AVERY, 78, prominent construction engineer engaged in irrigation, Inglewood, Calif.; and HALON Z. PAGE, 80, retired contractor of Garden City, N. Y., DeLand, Fla.

CONTRACTS AND CAPITAL

FOR THE THIRD consecutive week private engineering construction awards have topped their respective 1939 values. The current week's private volume is almost double a year ago, gaining 94 per cent; but it falls 19 per cent below last week's total. Public construction exceeds last week by 25 per cent but is 22 per cent lower than last year.

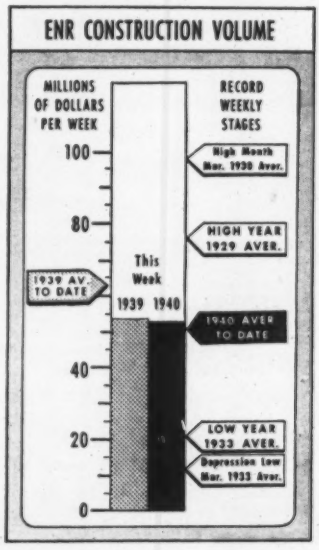
The week's construction total, $53,336,000, tops the preceding week by 5 per cent, but is 1 per cent below the corresponding 1939 week.

Private construction for the year to date, $280,584,000, is 12 per cent above the level for the 16-week period last year. The decrease in public volume, however, offsets the private gain, with the resultant loss of 19 per cent in the total volume as compared with the period last year.

In the classified construction groups, waterworks, sewerage, bridges, industrial buildings, earthwork and drainage, and streets and roads are above their respective totals for the preceding week; and waterworks, industrial buildings, commercial buildings, earthwork and drainage, and streets and roads are higher than their values for the 1939 week.

New capital for construction purposes for the week, $14,212,000, is 73 per cent lower than in the 1939 week. The current week's financing is made up of $8,663,000 in corporate security issues, and $5,549,000 in state and municipal bonds.

New construction financing for the initial 16-week period in 1940 totals $347,633,000, a decrease of 42 per cent from the $600,939,000 reported for the corresponding 1939 period.



CONTRACTS

(Thousands of dollars)

	Week Ending Apr. 20 1939	Apr. 11 1940	Apr. 18 1940
Federal	$2,528	$5,768	$4,483
State & Municipal	41,696	21,746	29,983
Total public	$44,224	$27,514	$34,466
Total private	9,723	23,376	18,870
TOTALS	$53,947	$50,890	$53,336
Cumulative 1940	(16 weeks)		$802,804
1939	(16 weeks)		$993,540

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial building, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1939 16 Wks.	Cumulative 1940 16 Wks.
NON-FEDERAL	$327,439	$347,633
Corp. securities	66,882	54,372
State & Mun.	181,222	218,969
R.E.A. loans	22,211	.....
U.S.H.A. loans	56,890	73,551
R.F.C. loans	234	741
FEDERAL	$273,500	$.....
TOTAL CAPITAL	$600,939	$347,633

FHA MORTGAGES

	Week Ending Apr. 15 1939	Apr. 6 1940	Apr. 13 1940
Selected for appraisal	$26,175	$27,731	$29,978*
Cumulative 1940	(15 weeks)		$326,959*
1939	(15 weeks)		$337,681

* Subject to revision.

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Apr. '40	238.26	114.53
Building Cost	Apr. '40	201.44	108.89
Volume	Mar. '40	162	71

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

SUBWAY ALTERATIONS NEW YORK

OWNER: Board of Transportation, City of New York, N. Y.

PROJECT: Construction or reconstruction of ventilators, emergency exit, station entrances, mezzanine and station control building, together with incidental alterations of parts of Seventh Avenue-Lexington Avenue, and Manhattan-Bronx Rapid Transit Railroads beginning at a point in Grand Concourse near 140th St. and running north to point near 150th St. Alterations needed to permit widening of Grand Concourse in Bronx Borough.

CONDITIONS: Contractor to furnish all materials and complete work in six months. Railroad to be operated continuously during progress of work. Rail, highway and water transportation available. Wages are: skilled, $1.15 to $2.12½ per hr.; semi-skilled, 52½c. to $1.50; and common labor, 50 to 87½¢. per hr.

BIDS: Ten bids were opened February 20, 1940, ranging from the contract low of $118,788 to $197,695.

LOW BIDDERS:

1. Lynn Construction Co., Inc., New York, N. Y. $118,788
2. Skolnick Building Corp., New York, N. Y.... 126,567
3. Laurence J. Rice, Forest Hills, New York, N. Y. 143,589

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Earth excavation	2,900 c. y.	$1.25	$3.00	$3.00
2. Rock excavation	1,200 c. y.	5.00	12.00	10.00
3. Concrete masonry	1,470 c. y.	19.00	16.00	16.00
4. Protective concrete masonry	280 c. y.	19.00	11.00	16.00
5. Finished surf., conc	5,000 s. f.	.08	.03	.11
6. Brick masonry	10 c. y.	35.00	30.00	30.00
7. Hollow terra cotta, brick or tile masonry	30 c. y.	20.00	15.00	20.00
8. Remove, dispose old masonry	840 c. y.	16.00	6.50	15.00
9. Plastering, on brick, hol. tile and metal lath	25 s. y.	1.50	1.40	1.50
10. Plastering, sew. manhole, basins	40 s. y.	2.00	1.50	1.00
11. Steel beams and shapes	175 ton	97.00	120.00	113.00
12. Architect. steel and iron	2,500 lb.	.08	.12	.15
13. Steel reinforcing bars	45 ton	110.00	100.00	140.00
14. Remove and dispose exist. steel	50 ton	10.00	20.00	20.00
15. Cut existing steel	150 s. in.	.30	1.00	.30
16. Drill holes	150 ea.	1.00	1.50	2.00
17. Remove old rivets	300 ea.	.75	.50	1.00
18. New rivets to connect steel	20 ea.	1.00	1.50	1.00
19. Remove, re-erect exist. steel	600 lb.	.04	.05	.05
20. Filling unused holes	100 ea.	.40	1.50	1.00
21. Countersink existing holes	10 ea.	1.00	2.00	1.50
22. Ream holes in exist. steel	10 ea.	1.00	2.00	1.00
23. Misc. iron castings	5,000 lb.	.05	.08	.07
24. Wire mesh (beam wrapping)	600 lb.	.15	.10	.30
25. Wire mesh (metal lath)	10 s. y.	1.00	.80	1.00
26. Waterproofing, 1-ply	160 s. y.	.40	.55	.50
27. Waterproofing, 3-ply	1,530 s. y.	.90	1.50	1.50
28. Waterproofing, 4-ply	980 s. y.	1.20	1.95	2.00
29. Brick, laid in asph. mastic, 1 layer	13 c. y.	40.00	35.00	50.00
30. Brick, laid in asph. mastic, 2 layers	4 c. y.	40.00	50.00	50.00
31. 6-in. Cl. A cast iron pipe	35 l. f.	12.00	6.00	3.00
32. Copper brg. cem. lined 3-in. steel pipe	240 l. f.	1.44	1.50	3.00
33. As above, 6-in. dia	25 l. f.	4.00	4.00	3.00
34. 6-in. back pressure valve	2 ea.	42.00	30.00	50.00
35. 12-in. vitr. sewer pipe	230 l. f.	.85	1.50	5.00
36. Spurs	8 ea.	20.00	10.00	4.00
37. Vitr. brick or granite blk. lining	6 s. y.	3.50	10.00	10.00
38. ¾-in. steel electr. conduit	1,800 l. f.	.22	.40	.30
39. 1-in. steel electr. conduit	350 l. f.	.25	.50	.55
40. 1¼-in. steel electr. conduit	150 l. f.	.29	.70	.70
41. 4x4x2-in. c.i. outlet boxes	10 ea.	1.75	2.00	4.00
42. 4x4x3-in. c.i. outlet boxes	90 ea.	1.90	2.25	5.00
43. 6x6x4-in. c.i. pull boxes	5 ea.	4.50	5.00	20.00
44. 18x18x6-in. c.i. junction boxes	1 ea.	60.00	60.00	155.00
45. 27x55x6-in. c.i. panel bd. boxes	1 ea.	100.00	150.00	176.00
46. 29x45x6-in. c.i. panel bd. boxes	1 ea.	100.00	140.00	172.00
47. Remove, reset existing gratings	1,600 s. f.	.60	.50	1.00
48. Steel curb angle	670 l. f.	1.35	2.00	2.00
49. Temp. pavement, roadway	1,400 s. y.	1.35	1.30	2.00
50. Upper 3-in. finish, conc. walls	120 s. y.	2.50	2.35	1.10
51. Support, maintain, protect RR	L. S.	4,000.00	7,800.00	5,650.00
52. Underpinning bldg., 393 Gr. Concourse	L. S.	1,000.00	100.00	1,200.00
53. As above, 395 Grand Concourse	L. S.	1,000.00	100.00	300.00
54. As above, 487 Grand Concourse	L. S.	500.00	100.00	500.00
55. As above, 150 E. 144th St	L. S.	1,000.00	100.00	1,500.00
56. As above, 157-163 E. 149th St	L. S.	1,000.00	100.00	2,000.00
57. Remove, reset emerg'y exit cover	L. S.	250.00	675.00	380.00
58. Alter, reconstr. exist. pipes	L. S.	610.00	1,900.00	860.00
59. Glazed tile	1,500 s. f.	.80	1.00	1.00
60. Weather-proof tile	220 s. f.	1.25	1.00	1.50
61. Mosaic and tile bands	220 s. f.	4.00	3.50	4.50
62. Mosaic and tile tablets	30 s. f.	5.00	4.00	5.50
63. Wainscots or bases	270 s. f.	.20	.30	.30
64. Finish on conc., brick or hol. tile	50 s. f.	.25	.20	.30
65. 3-in. floor finish	3,200 s. f.	.20	.25	.25
66. Concrete copings	60 c. f.	1.25	1.20	2.00
67. Self-supported stairs	80 l. f. tr.	1.65	1.50	2.00
68. Self-support. stairway landings	170 s. f.	.50	1.00	1.00
69. Supported stairs	200 l. f. tr.	1.25	.80	1.00
70. Non-slip metal treads	190 s. f.	.95	1.50	2.00
71. Cement wall strings	60 l. f.	.80	.50	1.00
72. Weepholes	30 ea.	.20	.25	1.00
73. Galv. strap anchors	50 ea.	.10	.50	1.00
74. Hollow metal change booth, type AHa	1 ea.	3,000.00	3,000.00	3,750.00
75. Hollow metal doors, type K	20 s. f.	2.00	4.00	5.00
76. Hollow metal doors, type S	2 set	85.00	100.00	300.00
77. Railings, type GS	170 s. f.	1.25	3.50	.90
78. Railings, type B	35 s. f.	1.50	3.00	4.00
79. Enameled sign plates	70 s. f.	.70	1.50	2.00
80. Enameled sign plates, type A	40 s. f.	1.00	1.00	2.00
81. Street railings, type K	45 l. f.	17.00	16.00	16.00
82. Oak hand-rails	110 l. f.	1.25	1.00	3.00
83. Register faces	3 ea.	10.00	25.00	20.00
84. Painting surfaces	3,000 s. f.	.04	.05	.05
85. Painting, 1 coat on exist. surf	500 s. f.	.04	.03	.04
86. Sta. control for removing lean-to portion	L. S.	2,000.00	2,045.00	3,000.00
87. Sta. control, for new wall	L. S.	2,500.00	1,500.00	3,250.00
88. Remove plumbing work	L. S.	200.00	745.00	318.00
89. Remove exist. railings, etc	L. S.	100.00	650.00	530.00
90. Remove exist. stairway and control railing	L. S.	40.00	600.00	500.00
91. Remove, reset doors	2 ea.	25.00	30.00	50.00
92. Electrical work	L. S.	4,980.00	4,280.00	5,000.00

PAVING STREET, TENNESSEE

OWNER: Tennessee Dept. Highways and Public Works, Nashville; J. W. Gentry, state highway engineer.

PROJECT: Widening and paving .836 miles of State Highway 2-A, Ninth and Lindsay Sts., Chattanooga, Tenn. Concrete surface.

CONDITIONS: Rail, highway and water transportation facilities available. Contractor to furnish all materials and complete job in 150 working days. Wage rates specified are: skilled labor, $1.00 per hr.; semi-skilled, 45c.; and common labor, 30c. per hr.

BIDS: Four bids received March 29, 1940, ranging from the contract low of $141,989 to $150,268.

LOW BIDDERS:

1. George O. White, Chattanooga, Tenn. (contract) $141,989
2. Dunn Constr. Co., Birmingham, Ala..... 144,752
3. Hardaway Contracting Co., Columbus, Ga.... 149,750

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Rd. and drain. excav., unclass	9,172 c. y.	$0.90	$0.90	$1.10
2. Borrow excav., common	3,700 c. y.	.75	.70	.85
3. Culvert excav., unclass	5,622 c. y.	2.25	1.50	2.50
4. Sodding	666 s. y.	.50	.50	.40
5. Cr. stone (tr. bd. rdway)	90 c. y.	4.50	4.00	5.00
6. Cem. conc. pavement (plain)	26,487 s. y.	2.45	2.52	2.60
7. Gray iron castings, Gr. 1 or A	53,612 lb.	.05	.05	.05
8. Class A concrete	91.8 c. y.	20.00	35.00	22.00
9. Reinforcing steel bars	372 lb.	.10	.10	.10
10. 4-in. vit. clay pipe drain	480 l. f.	.25	.25	.25
11. Brick masonry	72.84 M	60.00	75.00	40.00
12. Concrete sidewalk	59,671 s. f.	.25	.25	.26
13. Concrete driveway	2,027 s. f.	.30	.35	.32
14. Concrete curb	14.5 c. y.	26.50	24.00	27.50
15. Conc. comb. curb and gutter	602.6 c. y.	24.50	23.00	27.00
16. Remove, rebuild stone wall	L.S.	250.00	200.00	200.00
17. 4-in. conc. pipe drains	150 l. f.	.25	1.00*	.20
18. 6-in. conc. sew. pipe (non-reinf.)	150 l. f.	.50	1.20*	.45
19. 8-in. conc. sew. pipe (non-reinf.)	150 l. f.	.60	1.50*	.60
20. 15-in. conc. sew. pipe (non-reinf.)	1,356 l. f.	1.50	2.25*	1.55
21. 18-in. conc. pipe culvert	849 l. f.	2.50	3.00	2.55
22. 24-in. conc. pipe culvert	1,320 l. f.	3.00	4.50	3.25
23. 30-in. conc. pipe culvert	732 l. f.	6.00	6.00	4.55

* Vitrified clay pipe.

CONSTRUCTION REPORTS

Compiled by BUSINESS NEWS DEPARTMENT
Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, MANAGER
SCOTT McLEOD, STATISTICIAN
(Daily service also available—Write for details)

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction
(Named in order of Listing)

Water Supply — Unclassified
Sewers, Waste Disposal — Public Buildings
Bridges, Grade Cross'gs — Commercial Buildings
Streets & Roads — Industrial Buildings
Earthwork, Waterways

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR); LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published. CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Location of ENR Correspondents

Symbols and Abbreviations Include:

+ Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD McGraw-Hill Construction Daily

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Calif., San Jose—Purchasing 3-unit sand pressure filter plant, together with venturi tube chemical tester, etc., for swimming pool re-circulation sys.

Fla., Pahokee—Pahokee Drainage Dist., bond election soon, diesel powered pump. sta., drainage canal sys. $120,000.

Ill., Elgin—M. Lehman, mayor, water filter plant, auxiliary equip., appurtenances, piping. $15,000. V. Kasser, City Hall, engr. CD 1/17—ENR 1/25.

Kan., Gridley—E. G. Robison, mayor, WW sys. $20,000.

Mass., Hamilton—Water Dpt., watermains. Over $15,000. Whitman & Howard, 89 Broad St., Boston, engrs.

Minn., Granite Falls—Additional 75,000 gal. clear-water tank, equip., at filtration plant. $18,000 bonds voted. C. A. Barager, engr.

Mont., Billings—O. W. Nickey, city clk., making plans 3 m.g.c. reservoir. $90,000. Black & Veatch, 4706 Bway., Kansas City, Mo., engrs. CD 1/30—ENR 2/1.

N. Y., Newfane—Newfane Town Bd., Olcott, bids soon, exten. 1 mi. Olcott Water Dist. south and east, 6 in. main, hydrants.

N. C., Coats—$38,000 bond election May 14, water and sewerage sys. $90,000. J. B. Williams, mayor. CD 3/28—ENR 4/4.

N. C., Dunn — Water and sewerage sys. exten. $200,000. $50,000 bond election planned to supplement WPA funds. H. B. Taylor, mayor. D. P. Clifford, town engr.

N. C., Hudson — J. A. Hickman, mayor, $40,000 bond election May 7, water and sanitary sewerage sys. S. Rowe, Newton, engr.

N. C., Jonesville—Voted $27,000 bonds, new water sys., $23,000 bonds, exten. sanitary sewers. CD 3/6—ENR 3/14.

O., Millersburg—Installing water softener. $25,000. R. H. Hunter, Wooster, engr.

O., Youngstown—Bids in 30 to 60 days, exten. watermains at 1 mi. from present terminus at Riblets Corners and Canfield Rd. to Cornersburg. $25,000. R. W. O'Neill, 136 New York Ave., engr.

Pa., New Millport—School Bd., Knox Twp., J. Boag, secy., New Millport, water supply and distr. sys. for school and community. $15,000.

Pa., Schuylkill Haven—Boro Council, 6 in. c.i. watermains and 3 in. gas mains in 2, 3, 4 and Walnut Sts., Cressonia area. Over $15,000.

Tex., Hearne—A. E. Brady, mayor voted bonds, imprv. WW and light sys. exten., street lights, new engine and generator unit, new mains. $60,000.

Tex., Palestine—R. H. McLeod, mayor, drilling, equipping complete ready for pump, on deep water well. $15,000.

Tex., Palestine—R. H. McLeod, mayor, bond election Apr. 23, drilling, equipping new water (deep) supply wells, laying large mains between wells and reservoirs, pump. equip., etc. $85,000. S. R. Buchanan, city engr.

Tex., Rhone—J. Wren, mayor, WW, drilling, equipping wells, distr. lines, meters, fire hydrants. $16,180 bonds voted. Freese & Nichols, Capps Bldg., Fort Worth, engrs.

†Tex., San Antonio—Con. Q. M., Fort Sam Houston, WW. imprvs, extens, new distr. lines, plant exten. $30,000; sanitary sewerage sys. imprvs., new collecting lines, disposal facilities $30,000, at Brooks Field.

Tex., Winnsboro — R. H. McCrary, mayor, rehabilitating WW, drilling deep well. A. C. Moore & Co., 2404 Smith-Young Tower, San Antonio, consult. engr.

Alta., Claresholm — Imprv. WW. $15,000. C. Thorud, Town Hall, engr.

Alta., Raymond—Imprv. WW sys. S. Dyson, Town Hall, engr.

N. B., Dalhousie—WW sys. imprvs. F. J. Bateman, Town Hall, engr.

Que., Riviere du Loup—Distr. mains exten., general imprvs., c.i. additional hydrants, $20,000. G. Ouimet, Town Hall, engr.

Que., Sherbrooke—Filtration plant on Magog River between Drummond Dam and Little Lake. $260,000. W. H. Veilleux, City Hall, engr.

Que., Waterloo — Chlorination plant exten., distr. mains, general repairs. P. Brault, Town Hall, engr.

Sask., Canora—Chlorination plant and filter bed imprvs., general repairs, etc. $20,000. M. Dutchak, Town Hall, engr.

BIDS ASKED

Bids Asked April 24

N. Y., New York—Comr. Water Supply, Gas & Electricity, Municipal Bldg., electric pump. sta. in South Gate House, Central Park near 86 St. and 5 Ave.

Bids Asked April 25

Pa., Adamstown—C. L. Glass, secy. Adamstown Water Auth., 284 E. Main St., c.i. pipe requirements, deep well motor driven turbine pump. Over $5,000. F. H. Shaw, 53 N. Duke St., Lancaster, engr.

Bids Asked April 26

Tex., Denison — C. C. Hicks, secy., 4 m.g. filtration plant with pumphouse and equip. $140,000. A. M. Brennecke, City Hall, engr. CD 3/12—ENR 3/14, under CA.

Bids Asked May 3

†Calif., Hamilton Field—Con. Q. M., Fort Mason, San Francisco, storm water pump. station at Hamilton Field.

Bids Asked May 6

Calif., Redding—Water sys. exten., Park-Boardman subdivisions. W. K. Adams, city engr.

Bids Asked May 13

Ga., Atlanta—L. A. Walker, city purch. agt., City Hall, water filtration plant addn. at Hemphill Station. Wiedman & Singleton, Candler Bldg., engrs.; adv. ENR 4/18.

Bids Asked

†Calif., Alameda — U. S. Forest Service, Govt. Island, deep well turbine (water supply) pump and automatic pressure sys. complete with all fittings, del. Reno, Nev.

LOW BIDDERS

N. Y., Buffalo—C. A. Harding, comr. P. Wks., 502 City Hall, Apr. 5, bulkhead at F. G. Ward Pump. sta., from Chas. H. Wing Co., Inc., 75 Vandalia St. Est over $15,000. CD 3/25—ENR 3/28.

CONTRACTS AWARDED

Calif., Long Beach—Watermains, Arlington, Lincoln and Cameron Sts., etc., to Long Beach City Water Dpt., City Hall. Est. over $15,000. Bids 3/26, awarded 4/9. CD 3/14.

Calif., Los Angeles — Metropolitan Water Dist., 306 W. 3 St., approx. 21.8 mi. asbestos cement or vitr. clay pipe line from water softening plant to point near Whittier in West Covina, to United Concrete Pipe Corp., 1347 W. 208 St., Los Angeles. $359,111. Bids 4/4, awarded 4/12. CD 4/9—ENR 4/11.

Calif., Pasadena—Furnishing 33,800 ft. 4- to 12-in. c.i. Class 150 pipe, to U. S. Pipe & Fdry. Co., 448 S. Hill St. $25,494. Bids 3/27, awarded 4/2. CD 3/20.

Ill., Prairie du Rocher—WW sys., iron removal and water softening plant, etc. WPA. About $50,000. Russell & Axon, 4903 Delmar Blvd., St. Louis, Mo., engrs.

Mass., Shirley—Shirley Water Dist., Town Hall, 4 mi. 6 and 8 in. c.i. watermains, 250,000 gal. steel standpipe, pump house and equip. WPA. $100,000. H. E. Bailey, 177 State St., Boston, engr. CD 3/8—ENR 3/14.

Neb., Grand Island—F. S. White, city clk., concrete reservoir for city water supply, to C. E. Atwood, Grand Island. $50,750. Bids 4/3. CD 3/18—ENR 3/21.

N. Y., Highland—Town of Lloyd, Highland, water supply sys. WPA. $167,000. Morrell Vrooman, Inc., 21 N. Main St., Gloversville, engr.

N. Y., Syracuse — Water Div., City Eng. Dpt., City Hall, relocating water lines, own forces. $29,000.

N. C., Newton—Water and sewerage sys. WPA. $29,671. Awarded 4/10. G. M. Banner, mayor.

O., Seaman—S. B. Spriggs, mayor, WW distr. sys., treatment plant and water storage tank. WPA. $100,000. W. McGlaum, 229 E. 6 St., Cincinnati, dist. WPA engr. CD 11/17—ENR 11/23.

O., Toledo—1 m.g. elevated storage tank for Lake Erie water supply project, from Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Pa. $79,305. Greeley & Hansen, 110 Cherry St., engrs.

Pa., Berwick — Boro Council, imprv. water supply and distr. sys., replacing watermains, own forces. Over $15,000. CD 3/12—ENR 3/14.

Pa., Phila. — Equipping pump. stations, Queen Lane, Roxborough and Belmont Sts. WPA. $38,724. J. J. Lynch, WPA mgr. in charge.

★**Pa., Phila.**—Replacing 5,000 fire hydrants, sidewalk and paving repairs. WPA. $1,296,000. J. J. Lynch, WPA manager in charge.

Pa., Slatington—Boro Council, G. Evans, pres., exten. watermains. $15,000. Owner supervises. CD 3/26—ENR 3/28.

Tex., Roma—WW sys., well, distr. lines, pump. unit, storage unit, day labor. $16,000.

Tex., Wichita Falls — W. E. Fitzgerald, mayor, exten. watermains, fire hydrants. WPA. $30,000. B. Miller, city engr.

Wash., Cle Elum — Furnishing materials needed in water sys. imprvs., to Pacific Water Works Supply Co., Atlantic St. Dock, Seattle. $81,300. Bids 3/27. CD 3/7—ENR 3/14.

Wyo., Riverton—Water and sewerage sys. imprvs., WPA. $37,000. E. H. Steffy, clk.

Ont., Corinth—Central Pipe Line Co., G. W. White, mgr., Aylmer, replacing 4 mi. present mains with 8 in. pipe, own forces. $50,000.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Idaho, Boise—Sewers to connect existing sewers with sewage disposal plant. $46,000. WPA funds applied for.

Ill., Naperville—Claude Grimes, city clk., altering and sewage disposal plant addn. Over $25,000. Wells Eng. Co., Courthouse, Geneva, engr.

Ia., Traer—Sewage disposal plant. $25,000.

Mich., Kalamazoo—Sewage disposal plant. $100,000. City Engineer Office, Kalamazoo, engr.

Minn., Keewatin—J. Rebrovick, town recdr., $38,000 bond election May 13, sewage disposal plant.

Miss., Leland—Exten., imprv. sanitary sewers. $90,000.